

### SUPPORT FOR THE AMENDMENT

This Amendment amends Claims 1-2; and adds new Claims 5-7. Support for the amendments is found in the specification and claims as originally filed. In particular, support for Claim 5 is found in the specification at least at page 6, line 12 ("the working fluid is not provided"). Support for new Claims 6-7 is found in Claims 1-2, respectively. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-7 will be pending in this application. Claims 1 and 2 are independent.

### REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

Applicants thank the Examiner for the courtesies extended to their representative during the December 2, 2004, personal interview.

As discussed at the personal interview, the present invention provides a pressure sensor including a semiconductor device capable of detecting pressure; a bonding wire; a terminal that is connected to the semiconductor device by the bonding wire; and a housing having an accommodation space accommodating the semiconductor device, the bonding wire and the terminal, where the terminal and the housing are sealed by a fluorine-based adhesive. In a first embodiment a silicon-based oil working fluid is sealed in the accommodation space. In a second embodiment no working fluid is provided.

Some conventional pressure sensors include a fluorine-base oil as a working fluid and a silicone-based adhesive sealing the terminal and the housing. Other conventional pressure sensors include a fluorine-based gel as a working fluid and a fluorine-based adhesive. Specification at page 1, lines 12-22; page 2, lines 3-12.

However, fluorine-based oils and fluorine-based gels are expensive as working fluids. It would be desirable to replace these expensive working fluids with low cost working fluids, such as silicone-based oils. However, a silicone based-oil will cause a silicone-based adhesive to swell and will degrade the seal between the terminal and the housing. Specification at page 2, lines 20-27.

The present invention overcomes the high-cost and durability problems of conventional pressure sensors by using a silicone-based oil as the working fluid, or no working fluid; and by using a fluorine-based adhesive between the terminal and the housing. In embodiments where a silicone-based working fluid is used, swelling and degradation of the seal between the terminal and the housing is prevented due to the joint characteristics of the fluorine-based adhesive and the silicone-based oil. Specification at page 5, lines 3-10. In embodiments where no working fluid is used, particularly low manufacturing costs can be achieved. Specification at page 6, lines 12-13. As a result, the present invention provides a pressure sensor having high sensitivity and durability at a low manufacturing cost. Specification at page 3, lines 1-4; page 5, lines 3-10.

Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,595,939 ("Otake"). In addition, Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) over Otake.

Otake discloses a liquid-sealed semiconductor pressure sensor in which

[a] sealed pressure detecting chamber is formed between the connector housing 3 and a sealing diaphragm 5 and contains therein **fluoro silicone oil** as **filler oil 7** to be used as a pressure transmitting medium. Otake at title; column 3, lines 44-48.

Otake further discloses:

The **filler oil 7** may be replaced by dimethyl silicone oil or fluoro oil or any other **liquid** having appropriate properties. Connector pins 8 for signal output terminals are insert-molded and held in the connector housing 3. The interface between the connector pins 8 and the molding material of the connector housing 3 is **sealed** by an **adhesive agent 10**. The **agent 10** may include **some filler material** or a metal ring having a thermal expansion coefficient lower than that of the agent 10 **to ensure the seal's integrity**. Otake at column 3, lines 51-58.

However, other than disclosing that adhesive agent 10 may include some filler material or a metal ring, Otake is silent about the composition of adhesive agent 10.

Otake does not equate "some filler material" with "filler oil 7". Otake discloses that the adhesive agent 10 may include "some filler material", but does not disclose that the adhesive agent 10 may include "some filler material 7" or "some **of the** filler material". Instead of ensuring the integrity of the seal between the connector pin 8 and the connector housing 3, as required by Otake of the **adhesive** agent 10, a **liquid** filler oil 7 included in the adhesive agent 10 would hinder adhesion and degrade the seal's integrity. Otake fails to suggest that the adhesive agent 10 can include filler oil 7 in the form of a fluoro silicone oil, and fails to suggest that the adhesive agent 10 is a fluorine-based adhesive.

Because Otake fails to suggest the limitation of independent Claims 1 and 2 that "the terminal and the housing are sealed by a fluorine-based adhesive", the rejections over Otake should be withdrawn.

Pursuant to M.P.E.P. § 821.04, after independent product Claims 1-2 are allowed, Applicants respectfully request examination and allowance of new method Claims 6-7, which include all of the limitations of product Claims 1-2, respectively.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

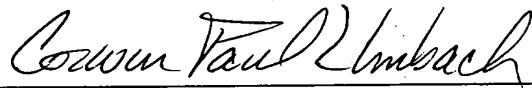
Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon



Corwin P. Umbach, Ph.D.  
Registration No. 40,211

NFO/CPU:sjh